

REMARKS

In order to expedite the prosecution of the present application and respond to the formal rejections made by the Examiner, the claims 20, 22-23, and 26 have been amended to more particularly point out and distinctly claim the subject matter which Applicants regard as the invention, or to cure grammatical and idiomatic errors contained therein. Claim 12 has been cancelled, because the subject matter of claim 12 has been incorporated into claim 20, 22-23, and 26. It is respectfully submitted that the currently presented claims contain no new matter and are cured of all formal defects. No new matter has been added.

Claims 3, 4, 7, 10, 12, 15, and 20-35 have been rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement, because the specification does not support the subject matter, "said nematic liquid crystal is not a chiral nematic liquid crystal." Applicant deletes such a subject matter in claims 20, 22-23, and 26.

Claims 3, 4, 7, 10, 12, 15, and 20-35 have been rejected under 35 U.S.C. §102(a) as being anticipated by the applicant's own admission of prior art. Applicant respectfully traverses this ground of rejection and urges that Figures 2 and 3 erroneously submitted as prior art cannot be used as prior art against claims because the erroneously submitted Figures are also the Applicant's own work. MPEP 2129, titled Admissions as Prior Art, clearly shows that even if labeled as "prior art," the work of the same inventive entity may not be considered prior art against the claims unless it falls under one of the statutory categories. See *Riverwood Int'l Corp. v. R.A. Jones & Co.*, 324 F.3d 1346, 1354, 66 USPQ2d 1331, 1337 (Fed Cir. 2003); see also *Reading & Bates Construction Co. v. Baker Energy Resources Corp.*, 748 F.2d 645, 650, 223 USPQ 1168, 1172 (Fed. Cir. 1984) ("[W]here the inventor continues to improve upon his own work product,

his foundational work product should not, without a statutory basis, be treated as prior art solely because he admits knowledge of his own work. It is common sense that an inventor, regardless of an admission, has knowledge of his own work."). In the present case, Figures 2 and 3 are the work of the Applicant, not the work of another. Paragraph [0012] clearly recites that the inventor measured dynamic characteristics of applied voltage waveforms and optical transmittance of nematic liquid crystals to develop a liquid crystal panel having a response speed enabling color images by tricolor back-lighting. Paragraph [0012] also recites that the present invention is based on the above knowledge of the Inventor, and its basic concept lies in increasing the response speed of a liquid crystal by applying a voltage to the liquid crystal at a unique timing different from those of conventional driving circuits. As such, the erroneously submitted Figures 2 and 3 as prior art should not be used as prior art against the claims of the present invention.

Claims 3, 4, 7, 10, 12, 15, and 20-35 have been rejected under 35 U.S.C. §103(a) as being obvious over Tanaka et al., Patent No. 5,594,464 in view of Molsen et al., Patent No. 6,122,024. Applicant respectfully traverses this ground of rejection and urges that the presently claimed invention is patentably distinguishable over the prior arts cited by the Examiner. Claims 20, 22-23, and 26 require the steps of applying a first voltage corresponding to image data to the liquid crystal during a first time period and applying a second voltage that does not corresponding to image data to the liquid crystal during a second time period. Tanaka discloses, in Figure 2, the applied scan electrode waveform 201, the applied signal electrode waveform 202, and the resulting composite waveform 203 upon concurrent application of waveforms 201 and 202, and Tanaka also discloses a voltage pulse applied such as (V1+V2) in t03 or V1 in t13. Tanaka, however, does not disclose the two-step application of the voltage, consisting of 1) applying voltages corresponding to

image data, and then 2) applying voltage not corresponding to image data. Tanaka discloses the voltage that is a concurrent application of two voltages, rather than two-step application of two voltages. Further, Tanaka does not disclose the voltage corresponding to image data and the voltage not corresponding to image data.

Tanaka states that these mediums do not have a lasting stable memory effect. From these statements of Tanaka, it is apparent that these mediums do not have a memory effect, and "these medium" must apparently be twisted nematic (TN) and supertwisted nematic (STN) liquid crystals in view of the preceding statement, "either a TN liquid crystal medium or a STN liquid crystal medium." Therefore, the portion of Tanaka quoted by the Examiner merely discuss prior art techniques that had to drive TN and STN liquid crystals with an active matrix system, and it never states that a Tanaka's system drives a TN or STN liquid crystal with an active matrix system. Apparently instead, the liquid crystal used in Tanaka's system is a liquid crystal having two metastable states in Column 1, lines 7-10. Also, the object of the Tanaka's invention is to provide a high definition, high precision liquid crystal display device having bistable capabilities that can be driven by a simple matrix display method of operation. It is assumed that Tanaka proposed to the use of a bistable liquid crystal and a method of driving it in order to realize a high definition liquid crystal display without using an active matrix system (TFT) that was expensive at the time of the Tanaka's invention.

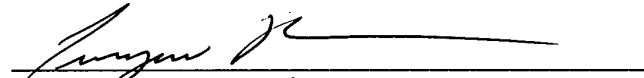
In addition, Claims 20, 22-23, and 26 further require a matrix liquid crystal panel using a nematic liquid crystal that is an active matrix liquid crystal panel. Tanaka discloses a matrix driving method using voltage averaging and an active matrix driving method in which a transistor or other active element is provided at each picture element or pixel, because the mediums need to be actively driven. Thus, Tanaka discloses the matrix driving method, but Tanaka does not

disclose the matrix liquid crystal panel or the active matrix crystal panel included in the liquid crystal display device. Accordingly, Claims 20, 22-23, and 26 are believed to be patentably distinguishable over Tanaka and Molsen, alone or in combination with one another.

Claims 3, 4, 7, 10, 12, 15, 21, 24-25, and 27-35 depend upon what is believed to be an allowable Claims 20, 22-23, and 26, are believed allowable therewith, and include additional features which further distinguish over Tanaka or Molsen. For example, Claims 3 and 27 recite "the second voltage applied in the second time period," and Claims 4 and 28 recite "erasure of the image displayed on the panel effected by driving the liquid crystal to display black on the panel." Claims 7 and 29 disclose "the liquid crystal display is normally black and the second voltage is zero volts." Claim 10 recites "the voltage applied in the second time period erases an image on the panel by darkening the TFT liquid crystal panel." Claim 15 recites "the unit period is less than or equal to eight milliseconds," but Tanaka discloses in column 22, line 2-3, that scanning of the entire screen was performed in one cycle every 60 seconds." The unit period of eight milliseconds is different by more than ten thousand times. Therefore, it is not obvious to set Tanaka's unit period to less than or equal to eight milliseconds. Claim 21 recites "the liquid crystal display device is a TFT liquid crystal display device." Claim 24 discloses "the first absolute voltage consists of a first positive voltage and a first negative voltage, and the sum of the first positive voltage and the first negative voltage in the unit period is zero voltage." Claims 25 and 31 disclose "the level corresponding to the second voltage is white or black." Claim 30 recites "the liquid crystal display device is a TFT liquid crystal display device including a plurality of pixels." Claim 32-35 recites "the nematic liquid crystal is a twisted nematic liquid crystal." Tanaka and Molsen do not include such additional features of the current invention which further distinguish over Tanaka and Molsen.

For the above reasons allowance of Claims is respectfully requested. Further and favorable reconsideration is respectfully requested.

Respectfully submitted,

  
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## United States Court of Appeals for the Federal Circuit

02-1030, -1154

RIVERWOOD INTERNATIONAL CORPORATION,

Plaintiff-Appellant,

v.

R. A. JONES & CO., INC.,

Defendant-Cross Appellant.

John S. Kiernan, Debevoise & Plimpton, of New York, New York, argued for plaintiff-appellant. With him on the brief was Dennis H. Hranitzky. Of counsel on the brief were Wellington M. Manning, Jr.

and Tim F. Williams, Dority & Manning, P.A., of Greenville South Carolina.

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Appealed from: United States District Court for the Northern District of Georgia

Judge Beverly B. Martin

United States Court of Appeals for the Federal Circuit

02-1030, -1154

RIVERWOOD INTERNATIONAL CORPORATION,

Plaintiff-Appellant,

v.

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DECIDED: March 31, 2003

Before CLEVINGER, SCHALL, and LINN, Circuit Judges.

LINN, Circuit Judge.

Riverwood International Corporation ("Riverwood") appeals from a final judgment of invalidity of certain claims of its U.S. Patent Nos. 5,666,789 ("the '789 patent") and 5,692,361 ("the '361 patent"), entered by the United States District Court for the Northern District of Georgia in favor of the defendant R.A. Jones & Co. ("Jones"). *Riverwood Int'l Corp. v. R.A. Jones & Co.*, No. 98-cv-2840-BBM (N.D. Ga. Aug. 16, 2001). Jones conditionally cross-appeals the portion of the final judgment finding infringement of certain claims of the '789 and '361 patents, specifically contending that the district court erroneously construed the term "flight bars" by not limiting it to unitary structural members. We hold that the district court erred as a matter of law in its conclusion that U.S. Patent No. 5,241,806 ("the '806 patent") is prior art by admission to the two patents-in-suit. We also hold on the cross-appeal that the district court did not err by construing the term flight bars to include a plurality of pieces, not just unitary structural members. Accordingly, we vacate the holding that the '806 patent is prior art by admission, vacate the judgment of invalidity, affirm the claim construction issue on cross-appeal, and remand the case for a determination of the remaining inventorship issues.

## BACKGROUND

Plaintiff Riverwood owns the '806, '789, and '361 patents ("patents-in-suit") directed to packaging methods and machines, such as those used in the food and beverage industries to group cans and bottles and load them into cartons. Jones is a machine manufacturer and competitor to Riverwood. Riverwood filed suit against Jones on September 29, 1998, alleging that Jones' cartoning machines infringed certain claims of the patents-in-suit. Jones counterclaimed, alleging invalidity of the asserted claims.

Kelley W. Ziegler is a named inventor on each of the patents-in-suit. The '806 patent, directed to various cartoner assemblies for loading article groups into open carton sleeves, issued on September 7, 1993, on an application filed on March 24, 1992. Ziegler, Allen L. Olson, and Curt W. Lovold are the three named inventors on the '806 patent. The '789 patent is directed to various continuous motion cartoning devices for loading stacked article groups into cartons and to a method of continuously loading cartons with stacked article groups having upper and lower sub-groups of articles. The '789 patent issued on September 16, 1997, on a continuation application with an effective filing date of March 1, 1993. Ziegler is the sole named inventor on the '789 patent. The '361 patent, directed to a continuous method of forming stacked or multiple layer article groups, issued on December 2, 1997, on a continuation application with an effective filing date of March 25, 1993. Ziegler, Jeffrey A. Lashyro, and Gary J. Vulgamore are the three named inventors on the '361 patent.

All of the asserted claims of the '806 patent found to be infringed depend from claim 1, which was previously held to be invalid. See *Riverwood Int'l Corp. v. Mead Corp.*, 212 F.3d 1365, 1367, 54 USPQ2d 1763, 1766 (Fed. Cir. 2000). Claim 2 is representative of the dependent claims found to infringe. Claims 1 and 2 recite:

1. A cartoner assembly for loading article groups into open carton sleeves comprising:



- a) an article infeed conveyor having a plurality of parallel guide structures fixed thereabove, said article infeed conveyor supplying a first stream of articles;
- b) an article selecting conveyor having a plurality of spaced, parallel and transversely oriented fixed flight bars and a longitudinal travel path disposed adjacent to and parallel with said article infeed conveyor, said flight bars intersecting said article infeed guide structures at a predetermined angle to form and move a second longitudinal stream of article groups of a predetermined pattern;
- c) a carton supply conveyor having spaced carton flight lugs synchronized and moving adjacent to and parallel with said article selecting conveyor to provide a third longitudinal stream of cartons with open ends facing said moving article groups; and
- d) article group transfer means for moving article groups into the open ends of the carton sleeves, said article group transfer means comprising guide support means longitudinally moving in parallel synchronization with said carton supply conveyor, a plurality of transversely operative, longitudinally moving pushing mechanisms, and activation means to transversely move said pushing mechanisms at predetermined longitudinal positions.

2. The cartoner assembly of claim 1, further comprising article funnel means movable between said carton supply means and said article group transfer means and being constructed and arranged to guide said article groups into the cartons and to maintain carton flap position as said transfer means is operative.

'806 patent, col. 14, ll. 35-68.

The only claim of the '789 patent found infringed, claim 18, claims:

18. A continuous motion cartoning apparatus for loading cartons with stacked article groups having upper and lower sub-groups of articles, comprising:

- a) an article group selection and transport mechanism comprising a plurality of flight bars forming a longitudinally oriented moving stream of article groups of a predetermined stacked pattern including the upper and lower article sub-groups;
- b) means to input a stream of articles at a first longitudinal location on said article group selection and transport mechanism and at a first vertical level to form the lower article sub-group;
- c) means to place a divider on the lower article sub-group at a second longitudinal location;
- d) means to input a stream of articles at third longitudinal location on said article group selection and transport mechanism and at a second vertical level to form the upper article sub-group on the divider;
- e) a carton supply and transport mechanism disposed adjacent and parallel to said article group selection and transport mechanism, said carton supply and transport mechanism forming a longitudinally oriented moving stream of cartons which are spacially synchronized with the stacked article groups; and

f) a side loading mechanism synchronized to move article groups on said article group selection and transport mechanism into cartons on said carton supply and transport mechanism, said side loading mechanism being disposed adjacent said article group selection and transport means and comprising support means, moving in parallel synchronization with said article group selection and transport means, movable pushing means operative in a transverse direction, and activation means to move said pushing means at predetermined positions in a travel path.

'789 patent, col. 15, l. 3 - col. 16, l. 18.

Representative claim 2 of the '361 patent, from which five of the eight asserted claims depend, claims:

2. A method for forming stacked article groups, comprising the steps of:

- a) supplying at least two streams of articles, each at a predetermined vertically distinct level;
- b) forming and longitudinally transporting a stream of first article sub-groups at a first level with an article group selection and transport mechanism having a plurality of fixed, transversely oriented, longitudinally moving flight bars which intersect said at least two supplied streams of articles;
- c) placing a support base on a top surface of each said first article subgroup, said support base being substantially flat and having at least one flap member disposed along an edge thereof, said flap member being foldable over an edge of said top surface of said first article subgroup; and
- d) forming a second article subgroup at a second level on top of said support base of each said longitudinally moving first article subgroup, with said article group selection and transport mechanism, whereby stacked article groups are formed.

'361 patent, col. 13, ll. 27-48.

During prosecution of each of the '789 and '361 patents, Riverwood's attorney filed an Information Disclosure Statement ("IDS"), pursuant to 37 C.F.R. §§ 1.56 and 1.97. Each IDS listed the '806 patent as "prior art." Specifically, the forms identified the '806 patent as "Ziegler et al., Assigned to Applicant's Assignee," and listed the other cited patents along with the statement:

The prior art references listed constitute the closest art of which the Applicant is aware relating to the invention of the above identified Application. The Application discloses and claims an invention over this prior art.

The '806 patent is not statutory prior art for purposes of 35 U.S.C. § 102(a) - (d). Jones argued before the district court that the reference to the '806 patent in the IDS submitted during prosecution of each the '789 and '361 patents transformed the '806 patent into prior art by admission. Jones alternatively argued that the '806 patent is prior art under 35 U.S.C. § 102(e). Riverwood argued that only part of the '806 patent disclosure constituted prior art. Riverwood offered evidence to the district court to show that Ziegler was the sole inventor of the double-stacking embodiment in the '806 patent, which provided the foundation for the inventions in the '789 and '361 patents and served as the basis for Jones' obviousness arguments at trial. That particular embodiment of the cartoner assembly utilizes "a two-tiered infeed

with both the existing level of infeed, and an additional level which is elevated above this level." '806 patent, col. 6, ll. 45-47. Riverwood also asserted that inventors Lashyro and Vulgamore listed on the '361 patent contributed alternative methods that were claimed in the original patent application but were withdrawn during prosecution, thus leaving Ziegler as the sole inventor of the claimed invention in the '361 patent.

Prior to trial, the district court held that the '806 patent was prior art by admission and could be presented as such to the jury during trial. In addition, the district court issued a separate Markman order in which it construed several terms in the patents including the expression "flight bars," which appears in several claims in the patents-in-suit. The court construed "flight bars" to mean:

A term of art describing a type of structure that is used to select and transport articles along a cartoner, and may be driven by one conveyor or may include multiple conveyors moving in synchronization. This structure includes at least one part having a wedge-shaped or pointed tip and at least one part having a wall. The term may include a plurality of pieces driven by one conveyor or by multiple conveyors moving in synchronization.

The jury found that one of Jones' machines infringed claim 18 of the '789 patent and all of the asserted claims of the '361 patent. However, the jury also found that all of the asserted claims in the '361 and '789 patents were invalid as being obvious under 35 U.S.C. § 103. The jury further found five of the six asserted claims of the '806 patent were infringed but were invalid as obvious. Riverwood filed a motion for judgment as a matter of law, or, alternatively, for a new trial. The district court denied both motions and entered judgment in accordance with the jury verdict.

Riverwood only appeals the final judgment of invalidity regarding the '789 and '361 patents. It argues that the district court should have conducted an evidentiary hearing to determine what portions of the '806 patent constitute prior art. Jones argues that the '806 patent is properly considered prior art in its entirety and that Riverwood waived the issue by not objecting to the jury instructions. Jones conditionally cross-appeals the final judgment based on the jury finding of infringement insofar as it was premised on the district court's construction of the claim term "flight bars."

We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

## DISCUSSION

### A. Standard of Review

The denial of a motion for judgment as a matter of law or for a new trial is a procedural issue not unique to patent law, which we review under the law of the regional circuit where the appeal from the district court normally would lie. *EMI Group N. Am., Inc. v. Cypress Semiconductor Corp.*, 268 F.3d 1342, 1347, 60 USPQ2d 1423, 1427 (Fed. Cir. 2001). Likewise, we apply the law of the regional circuit to the procedural question of waiver. See *Midwest Indus., Inc. v. Karavan Trailers, Inc.*, 175 F.3d 1356, 1359, 50 USPQ2d 1672, 1675 (Fed. Cir. 1999) (en banc in relevant part). In the Eleventh Circuit, the denial of a motion for judgment as a matter of law is reviewed de novo. *Slicker v. Jackson*, 215 F.3d 1225, 1229 (11th Cir. 2000). A district court's order denying a motion for a new trial is reviewed for abuse of discretion. *Lambert v. Fulton County*, 253 F.3d 588, 595 (11th Cir. 2001).

This court reviews de novo the legal question of what qualifies as prior art under 35 U.S.C. § 103. See

Reading & Bates Constr. Co. v. Baker Energy Res. Corp., 748 F.2d 645, 652, 223 USPQ 1168, 1172 (Fed. Cir. 1984). Likewise, claim construction is a question of law that this court reviews de novo. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456, 46 USPQ2d 1169, 1174 (Fed. Cir. 1998) (en banc).

## B. Analysis

### I

The first question before us is whether Riverwood waived the issue of whether the '806 patent was prior art to the '789 and '361 patents. Jones argues that Riverwood waived the issue because Riverwood failed to object under Federal Rule of Civil Procedure 51 to the district court's jury instruction that the '806 patent is prior art to the '789 and '361 patents.

Prior to trial, Jones moved for partial summary judgment of invalidity, asserting that the '789 and '361 patents were obvious over the '806 patent. In the briefing accompanying Jones' motion, both parties discussed whether the '806 patent constituted prior art to the '789 and '361 patents. In its order denying summary judgment, the district court noted in reference to the prior art status of the '806 patent:

The court understands that this issue is vigorously disputed by Riverwood. Although Jones's obviousness motion relies upon the '806 patent as prior art and discusses this issue somewhat, it appears to the court that Jones has not had an opportunity to be fully heard on this question. If the parties anticipate the need for a ruling on this issue (which seems likely), the court is strongly inclined to address the issue before trial if at all possible. To that end, the parties may submit memoranda addressing the issue of whether Jones may rely on the '806 patent at trial in an effort to prove that the '789 and '361 patents are obvious.

Both parties submitted supplemental memoranda in accordance with the district court's order. One day before the jury trial began, the district judge issued a five-page ruling that the '806 patent could be considered by the jury as prior art to the '789 and '361 patents. It is undisputed that at trial, on the basis of the court's ruling, Jones argued that the '789 and '361 patents were obvious in light of the '806 patent. Riverwood, having already opposed Jones' contention and lost, did not object to the court instructing the jury that the '806 patent was prior art, either during the charge conference or after the jury instructions were read.

Generally, a party must object to a jury instruction to preserve a claim of error on appeal. See Fed. R. Civ. P. 51 ("No party may assign as error the giving or the failure to give an instruction unless that party objects thereto before the jury retires to consider its verdict, stating distinctly the matter objected to and the grounds of the objection."). "The purpose of the rule is to enable the trial court to correct any error it may have made before the jury begins its deliberations and thus avoid the necessity of a new trial." *Lang v. Tex. & Pac. Ry. Co.*, 624 F.2d 1275, 1279 (5th Cir. 1980). While an objection on the record is normally a prerequisite to preserving the issue for appeal, the Eleventh Circuit has recognized a futility exception to Rule 51 in circumstances where the basis for the objection is already known to the district court and the objection would be futile. *Id.*; *Farley v. Nationwide Mut. Ins. Co.*, 197 F.3d 1322, 1329 (11th Cir. 1999).

This case squarely presents an example of the futility exception. The district court was aware of Riverwood's position that the '806 patent was not prior art to the '789 and '361 patents. It was a central

issue in the summary judgment briefs. Moreover, the district court, on its own initiative, invited the parties to discuss the issue in a separate round of briefs. The district court issued a written ruling one day before the trial that carefully addressed only that issue. The trial was then conducted on the basis of that ruling. Riverwood did not need to object again at the charge conference two weeks later after Jones, with the district court's blessing, argued that the '789 and '361 patents were obvious in light of the court's ruling that the '806 patent was prior art by admission. An objection just prior to the jury retiring to deliberate, in this case, would not have enabled the district judge "to correct any error it may have made . . . and thus avoid the necessity of a new trial." Lang, 624 F.2d at 1279. Under circumstances in which the prior art status of a reference is the subject of a ruling made at the commencement of a trial which is conducted on the basis of that ruling, an objection to a jury instruction embodying that ruling does not serve to avoid the necessity of a new trial and falls within the futility exception. See *id.* The failure to object under those circumstances does not constitute a waiver of the right on appeal to claim error in the jury instruction. Thus, we hold that Riverwood did not waive the issue.

## II

We next turn to whether the '806 patent is prior art to the '789 and '361 patents under 35 U.S.C. § 103. Jones argues that the district court correctly held that the '806 patent is prior art to the '789 and '361 patents based on Riverwood's "admissions" during prosecution of the '789 and '361 patents. In the alternative, Jones argues that the '806 patent is prior art under 35 U.S.C. § 102(e). Riverwood argues that one's own work cannot be prior art absent a statutory basis, and the district court erred by not conducting a factual inquiry to discern what portion of each patent-in-suit constituted Ziegler's own work.

Section 103(a) states:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

One step in any obviousness analysis is to determine the scope and content of the prior art. See *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966). The term "prior art" as used in section 103 refers at least to the statutory material named in 35 U.S.C. § 102. In *re Wertheim*, 646 F.2d 527, 532, 209 USPQ 554, 560 (CCPA 1981). However, section 102 is not the only source of section 103 prior art. Valid prior art may be created by the admissions of the parties. In *re Fout*, 675 F.2d 297, 300, 213 USPQ 532, 535 (CCPA 1982). Here, the district court held that the '806 patent was prior art by admission and did not consider whether it constituted prior art under section 102(e).

We first consider whether the '806 patent is prior art by admission. This court and its predecessor have held that a statement by an applicant during prosecution identifying certain matter not the work of the inventor as "prior art" is an admission that the matter is prior art. In *re Nomiya*, 509 F.2d 566, 571 n.5, 184 USPQ 607, 611 n.5 (CCPA 1975). In *Nomiya*, the applicants filed a patent application containing two figures labeled as "prior art" and described as such in the specification. *Id.* at 570-71, 184 USPQ at 611. The examiner rejected the pending claims as obvious over a U.S. patent in light of the two figures. *Id.* The applicants argued that the figures could not constitute prior art absent a statutory basis in section 102. This court's predecessor disagreed: "By filing an application containing Figs. 1 and 2, labeled prior art, *ipsissimis verbis*, and statements explanatory thereof appellants have conceded what is to be considered as prior art in determining obviousness of their improvement." *Id.* at 571, 184 USPQ at 611-12 (footnote omitted). Similarly, in *Fout*, an applicant's admission of actual knowledge of the prior

invention of another, which was described in the preamble of a Jepson claim, was held to constitute an admission that the described invention was prior art to the applicant. 675 F.2d at 301, 213 USPQ at 534.

While *Nomiya* and *Fout* stand for the proposition that a reference can become prior art by admission, that doctrine is inapplicable when the subject matter at issue is the inventor's own work. In *In re Ehrreich*, 590 F.2d 902, 200 USPQ 504 (CCPA 1979), the examiner considered material from the preamble of a Jepson claim as prior art when making an obviousness rejection. *Id.* at 909-10, 200 USPQ at 510. The *Ehrreich* court found that rather than making an admission about the scope and content of the prior art, the applicant used Jepson language to avoid a double patenting rejection in the applicant's co-pending application. *Id.*, 200 USPQ at 510. That co-pending application was not available to the public, was not the work of another, and was therefore not prior art under any statutory provision. The court concluded: "We think that a finding of obviousness should not be based on an implied admission erroneously creating imaginary prior art. That is not the intent of § 103." *Id.*, 200 USPQ at 510.

In *Reading & Bates Construction Co. v. Baker Energy Resources Corp.*, 748 F.2d 645, 223 USPQ 1168 (Fed. Cir. 1984), this court again considered an obviousness challenge to a patent in which certain claims referred to the patentee's own patent in both the specification section entitled "Summary of the Prior Art" and in the preamble to a Jepson claim. The *Reading & Bates* court held that the reference in the Jepson claim preamble to the applicant's own prior work was not prior art, citing the reasoning and policy of *Ehrreich* that "the preamble, standing alone, was not an admission that one's own prior work is prior art." *Id.* at 649, 223 USPQ at 1171. It also held that the patentee's discussion of his own patent in the specification section entitled "Summary of the Prior Art" did not constitute an admission that the patent was prior art. In reaching its conclusion, the court reviewed our precedent and recognized the "policy behind requiring a statutory basis before one's own work may be considered as prior art." *Id.* at 650, 223 USPQ at 1171 (citing *In re Fout*, 675 F.2d 297, 213 USPQ 532).

[T]here is an important distinction between the situation where the inventor improves upon his own invention and the situation where he improves upon the invention of another. In the former situation, where the inventor continues to improve upon his own work product, his foundational work product should not, without a statutory basis, be treated as prior art solely because he admits knowledge of his own work. It is common sense that an inventor, regardless of an admission, has knowledge of his own work.

*Id.*, 223 USPQ at 1172.

While the present case does not involve a Jepson preamble or an explicit reference in the specification to the prior art, the policy of *Reading & Bates* is applicable nonetheless. One's own work may not be considered prior art in the absence of a statutory basis, and a patentee should not be "punished" for being as inclusive as possible and referencing his own work in an IDS. The regulations governing the IDS reflect that policy. For example, 37 CFR § 1.97(h) provides: "The filing of an information disclosure statement shall not be construed to be an admission that the information cited in the statement is, or is considered to be, material to patentability as defined in § 1.56(b)." Thus, if the '806 patent were issued to the same inventive entity, its inclusion in the IDS would not be deemed to be an admission that the '806 patent is material to the patentability of the inventions in the '789 and '361 patents and would not amount to an admission that the '806 patent is prior art.

We next address Jones' alternative argument that the '806 patent is prior art under 35 U.S.C. § 102(e). That statute provides:

A person shall be entitled to a patent unless--

\* \* \*

(e) the invention was described in . . . (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent . . .

35 U.S.C. § 102(e) (2000) (emphasis added). The statute explicitly states that the reference at issue must be "by another." Thus, just as a patent issued to the same inventive entity cannot be prior art by admission, an application issued to the same

inventive entity cannot be prior art under section 102(e). See *In re Costello*, 717 F.2d 1346, 1349, 219 USPQ 389, 391 (Fed. Cir. 1983) ("An applicant may also overcome a reference by showing that the relevant disclosure is a description of the applicant's own work. The pertinent inquiry is under 35 U.S.C. § 102(e).") (footnote omitted); *In re Land*, 368 F.2d 866, 878, 151 USPQ 621, 632 (CCPA 1966).

Even though we have concluded that patents issued to the same inventive entity are not prior art by admission or under section 102(e), that does not end the matter at hand. In the present case, the patents-in-suit were not issued to the same inventive entity. The '806 patent issued to Ziegler, Olson, and Lovold. The '789 patent issued to Ziegler only. And the '361 patent issued to Ziegler, Lashyro, and Vulgamore. To fully answer the question before us - whether the '806 patent is prior art as to the '789 and '361 patents - the district court must look beyond the superficial fact that the references were issued to different inventive entities. What is significant is not merely the differences in the listed inventors, but whether the portions of the reference relied on as prior art, and the subject matter of the claims in question, represent the work of a common inventive entity. See *In re DeBaun*, 687 F.2d 459, 462, 214 USPQ 933, 935 (CCPA 1982).

In *DeBaun*, the examiner rejected *DeBaun*'s application as obvious in light of U.S. Patent No. 3,964,278 ("the '278 patent") issued to *DeBaun* and *Noll* less than one year before *DeBaun*'s filing date. *DeBaun* submitted a declaration that he was the sole inventor of everything in the '278 patent that was relied on by the examiner as the basis of the obviousness rejection in the subsequent application. *Id.* at 461, 214 USPQ at 934-35. In light of the declaration, this court's predecessor reversed the examiner's rejection, holding that the examiner should have considered the "evidentiary" issue of "who invented the subject matter disclosed by [the reference] which was relied on to support the rejection." *Id.* at 462, 214 USPQ at 935 (citing *In re Land*, 368 F.2d 866, 879-80 n.11, 151 USPQ 621, 633 n.11 (CCPA 1966)) (alterations in original). While *DeBaun* was an appeal from the PTO in which the reference was asserted as prior art for purposes of patentability, the same principle applies to the use of a reference in a post-issuance validity challenge. See *DeGraffenreid v. United States*, 20 Cl. Ct. 458, 467, 16 USPQ2d 1321, 1328 (1990).

Prior to trial, *Riverwood* presented evidence that *Ziegler* was the sole inventor of the subject matter of the '806 patent that *Jones* intended to rely on as prior art to the '789 and '361 patents. *Riverwood* also presented evidence that the only contributions made by *Lashyro* and *Vulgamore* toward the '361 patent were those claimed in the original application but deleted during prosecution. Thus, *Riverwood* claimed that the '361 patent erroneously names *Lashyro* and *Vulgamore*, and it asked the district court to correct inventorship pursuant to 35 U.S.C. § 256. The district court did not determine whether *Riverwood* met its burden to prove those allegations. Rather, it concluded that by listing the '806 patent as "prior art,"

Riverwood admitted as much and "waive[d] the ability to raise arguments about why section 102 does not require treatment of the reference in question as prior art." We hold that by not deciding who invented the portion of the subject matter disclosed in the '806 patent that served as the basis for Jones' obviousness contentions, the district court erred. We, accordingly, vacate the district court's holding that the '806 patent is prior art by admission.

If Ziegler was the sole inventor of the portions of the '806 patent relied upon by Jones in its obviousness arguments, then the '806 patent is not prior art to the '789 patent. In addition, if Riverwood sustains its burden of proof that Ziegler is the sole inventor of the '361 patent, then the '806 patent would not be prior art to the '361 patent, and the district court should order correction of the inventorship of that patent. See 35 U.S.C. § 256. Because it is undisputed that Jones' obviousness arguments relied extensively on the '806 patent as the invalidating prior art reference, we vacate the judgment of invalidity and remand the obviousness issue for proceedings not inconsistent with this opinion.

### III

Because we vacate the judgment of invalidity, we turn to Jones' cross-appeal that the district court erred in its claim construction of the term "flight bars." In a pre-trial Markman ruling, the district court construed the term "flight bars" to mean:

A term of art describing a type of structure that is used to select and transport articles along a cartoner, and may be driven by one conveyor or may include multiple conveyors moving in synchronization. This structure includes at least one part having a wedge-shaped or pointed tip and at least one part having a wall. The term may include a plurality of pieces driven by one conveyor or by multiple conveyors moving in synchronization.

Jones argues that the district court improperly relied upon extrinsic evidence in reaching its claim construction. Jones submits that "flight bars" are "unitary structural members having wedge shaped tips at one end."

"In construing claims, the analytical focus must begin and remain centered on the language of the claims themselves, for it is that language that the patentee chose to use to 'particularly point[ ] out and distinctly claim[ ] the subject matter which the patentee regards as his invention.'" *Interactive Gift Express, Inc. v. Compuserve, Inc.*, 256 F.3d 1323, 1331, 59 USPQ2d 1401, 1406 (Fed. Cir. 2001) (quoting 35 U.S.C. § 112, 2); see generally *Tex. Digital Sys., Inc. v. Telegenix Inc.*, 308 F.3d 1193, 1201-02, 64 USPQ2d 1812, 1817 (Fed. Cir. 2002). The terms used in the claims bear a "heavy presumption" that they mean what they say and have the ordinary meaning that would be attributed to those words by persons skilled in the relevant art. See *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366, 62 USPQ2d 1658, 1662 (Fed. Cir. 2002). Moreover, unless compelled otherwise, a court will give a claim term the full range of its ordinary meaning as understood by persons skilled in the relevant art. See *Rexnord Corp. v. Laitram Corp.*, 274 F.3d 1336, 1342, 60 USPQ2d 1851, 1854 (Fed. Cir. 2001).

Here, both parties agree that "flight bars" must be interpreted the same way for each patent-in-suit. The parties further agree that the term "flight bars" should be given its ordinary and accustomed meaning. However, none of the patents-in-suit explicitly defines the term, and the court has not found the term in any dictionary or treatise. See *In re Paulsen*, 30 F.3d 1475, 1480, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994) ("an inventor is indeed free to define the specific terms used to describe his or her invention");



Tex. Digital Sys.; 308 F.3d at 1202-03, 64 USPQ2d at 1818 ("Dictionaries, encyclopedias and treatises, publicly available at the time the patent is issued, are objective resources that serve as reliable sources of information on the established meanings that would have been attributed to the terms of the claims by those of skill in the art.").

The district court held, *inter alia*, that the "term [flight bars] may include a plurality of pieces driven by one conveyor or by multiple conveyors moving in synchronization." In other words, a flight bar is not limited to a unitary structure. Jones argues that the district court erred by not limiting the term "flight bars" to a unitary structure. After a *de novo* review of the entire record, we are in accord with the district court and find no reason to limit the term flight bars to a unitary structure. The term "flight bars" is used generally throughout the patents and consistently refers to structure that intersects articles on a conveyor, forms groups, and moves the articles. Nothing in the claim language, specification, or prosecution history suggests that flight bars must be of a unitary structure. The district court, consistent with our guidance that a claim term is to be given "the full range of its ordinary meaning as understood by an artisan of ordinary skill," *Rexnord*, 274 F.3d at 1342, 60 USPQ2d at 1854, instructed the jury not to limit the term to the unitary structure found in the specification. We agree with that conclusion.

As noted above, the district court also construed flight bars to include, *inter alia*, a "structure that is used to select and transport articles along a cartoner, and may be driven by one conveyor or may include multiple conveyors moving in synchronization." In addition, the district court held that flight bars "include[ ] at least one part having a wedge-shaped or pointed tip and at least one part having a wall." While Jones does not challenge these holdings of the district court, we hold that the district court erred by holding that flight bars "may be driven by one conveyor or may include multiple conveyors moving in synchronization" and by holding that flight bars include "at least one part having a wall." Nothing in the intrinsic evidence requires us to construe the term "flight bars" to include these limitations. These errors, however, are of no consequence to the disposition of the case because Jones does not argue that its device does not meet these limitations.

Jones also complains that the district court improperly relied on extrinsic evidence, including the expert testimony from an engineer at a corporation defending infringement allegations in another case involving the same patents. While the district court did consider that extrinsic evidence, district judges are free to do so "to help the court come to the proper understanding of the claims." *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1584, 39 USPQ2d 1573, 1578 (Fed. Cir. 1996). Of course, extrinsic evidence "may not be used to vary or contradict the claim language" or "the import of other parts of the specification." *Id.*, 39 USPQ2d at 1578. Here, the district judge did not impermissibly use extrinsic evidence.

#### IV

In the reply portion of its brief, Jones spends more than three pages arguing that Riverwood's appeal is frivolous and asks the court to award Jones double its costs and attorneys' fees. Jones did not file a separate motion arguing frivolousness. The court requires members of the bar of this court to be familiar with and to assiduously follow the court's rules of practice. Rule 38 of the Federal Rules of Appellate Procedure requires that allegations of frivolousness be presented in "a separately filed motion." When reminded at oral argument of the requirement of the rule that a separate motion is required to raise an issue of frivolousness, and when warned that baseless assertions of frivolousness may in and of themselves be frivolous, Jones' counsel neither withdrew the assertion nor subsequently filed a separate Rule 38 motion. The court thus considers the charges of frivolousness as vilification of appellant's appeal, not the proper identification of frivolous conduct. Such appellate affectation is looked upon with disfavor and comes dangerously close to being itself frivolous. The court expects

better from the members of our bar and disapproves of the cavalier assertion of allegations of frivolousness and the disregard of the court's rules by Jones' counsel in this case.

## CONCLUSION

Because the district court erred in holding that the '806 patent was admitted prior art to the '789 and '361 patents, we vacate that holding and the judgment of invalidity, and remand for a determination of whether the portions of the '806 patent relied on as prior art, and the subject matter of the claims in question of the '789 and '361 patents, represent the work of a common inventive entity. If warranted, the district court also should order correction of the '361 patent. Because the district court properly construed the term "flight bars" by not limiting it to unitary structural members, we affirm the judgment of infringement of the '789 and '361 patents.

## AFFIRMED-IN-PART, VACATED-IN PART, AND REMANDED

## COSTS

Costs to Riverwood.